! TECHNICAL GUIDE #11 !

DESIGNING INSTITUTIONAL ARRANGEMENTS TO MAXIMIZE HOUSEHOLD FOOD SECURITY

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March, 1999

CONTENTS

1. Introduction 11-1

2. The Rural Development Plan for the Western Region, Honduras 11-1

3. Designing Institutional Arrangements to Maximize Food Security Impact on the Poor . . 11-7

1. INTRODUCTION[1]

Technical Guides #1 through 10 show how using information on food security and nutrition can identify who is food secure or at nutritional risk, identify causes of food insecurity or nutritional risk and the interventions that will alleviate these, and aid in the design of project monitoring and evaluation. The implicit theme running through these guides is that better information, more skillfully used, will improve the technical design of project—where interventions should be placed; who should be the beneficiaries; and what form they should take. This guide acts as a complement to this work. It outlines how such knowledge can be used to strengthen the institutional structure—the relationships between different organizations and individuals—that underpin many development interventions.

Unlike the more technical issues covered in other guides, this topic is one that is unlikely to be familiar to many development project staff. For this reason, throughout this guide, reference is made to the Rural Development Plan of the Western Region, Honduras (PLANDERO), which we use to illustrate some of the general issues involved here. The guide begins with a brief description of PLANDERO. Out of this description, we isolate the factors that have frustrated its attempts to reach the poorest farmers in this region of Honduras. We then outline how these problems can be resolved, in part by drawing on the methods described in other technical guides in this series.

2. THE RURAL DEVELOPMENT PLAN FOR THE WESTERN REGION, HONDURAS[2]

The Rural Development Plan of the Western Region, Honduras (PLANDERO) is a five-year, $16 million investment designed to increase the incomes of the rural poor and create a market for rural development services. The Western Region is, by virtually any measure (consumption, income, expenditure, and nutrition), the poorest in Honduras. Launched in July 1995, PLANDERO's major activities are in the areas of technology transfer, promotion, training

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[1] Funding for data collection and analysis of these data has been supported by the International Fund for Agricultural Development (TA Grant No. 301-IFPRI). We gratefully acknowledge this funding, but stress that ideas and opinions presented here are our responsibility and should, in no way, be attributed to IFAD.

[2] We would like to stress that our intention is not to criticize the staff of PLANDERO or its project controller. Instead, we are using PLANDERO as a means of making clear a number of concerns relating to the institutional design of interventions.

and communication, and credit and financial services. The program's production strategy centers on increased productivity for basic grains and coffee, diversification of agricultural production, conservation and recovery of soils and vegetation, and improved postharvest handling, processing and marketing. Rather than provide extension and credit services directly, PLANDERO issues annual contracts to a number of for-profit private companies that are matched to producer groups in communities across the program's zone of influence. These companies are expected to conduct participatory appraisals of their communities' technical and credit needs, provide technical assistance, and facilitate small farmers' access to credit. The program's operational strategy identifies criteria for the prioritization and selection of areas of operation. These include concentration of poor smallholders, productive potential, absence of other service providers, and existence of pre-formed producers groups. With respect to individual beneficiary families, these should earn no more than $2,000 per annum, own no more than 15 *manzanas* (10.5 hectares) agricultural-quality land with no more than 3 *manzanas* (2.1 hectares) sown to coffee, no more than 7 *manzanas* (4.9 hectares) sown to basic grains, and no more than 5 head of cattle.

The ability of the project to reach those households at greatest risk of food insecurity in the project area is an outcome of two different processes: first, the once-yearly administrative selection of communities destined to receive technical and financial assistance from the project and its subcontractors during the course of the year, and second, the complex social and political process within the selected communities that determines which households get to participate in the organized groups. As already noted, the project documentation stresses that beneficiaries should be among the poorer households in western Honduras. However, a number of addition criteria for community selection are also specified. These include the potential for increasing production and income, the absence of other development organizations working in the same community, the prior presence of other projects in the area, and unspecified "strategic" factors assuring impact.

It is possible to quantify the impact of a number of community characteristics on the likelihood that a given municipality is selected for incorporation into PLANDERO.
Table 1 reports the proportional changes in the likelihood of selection, given a change in five different independent variables. The first three variables provide an indication of the costs

associated with reaching different localities. It is hypothesized that costs rise as the distance from the project headquarters increases. Conversely, costs of establishing groups are likely to fall with increased density of population and with size of municipality. The prevalence of stunting is an indicator of the degree of poverty within the municipality. If the project is seeking out the poorest municipalities, this variable should have a positive effect on the likelihood of selection. Finally, the percentage of farmers receiving production credit in 1993 is included to capture the impact of the presence of a previous development project. Table 1 indicates that for every additional 10 kilometers traveled away from the project headquarters, the likelihood that a community is included in PLANDERO falls by 37 percent in 1998. It shows that in the first year of the project, municipalities were most likely to be chosen for inclusion in the project if they were close to the project headquarters, large, and previous beneficiaries of production credit. The selection of municipalities was not associated with either the prevalence of malnutrition—the indicator strongly correlated with long-term poverty—or the population density. By 1998 (Project Year 3), by which time the project had met over 95 percent of its original recruitment target, the expansion of the project's activities over most of the region had somewhat obscured the tendency to select larger municipalities, but there was still a clear preference for those closer to the project headquarters.[3] Prevalence of malnutrition and population density continued to have no effect on the selection process. At this point, there was no longer any association with levels of credit obtained from previous projects, nor was there any association between the number of households recruited in each of the 41 municipalities, and their population densities. Rather, the number of households was associated with the overall population size of the municipality.

[3] This observation is driven, in part, by the fact that those municipalities furthest from the project headquarters, in the southern tip of the department of Lempira, were excluded from PLANDERO from the beginning, because they were already part of an FAO-funded development project.

Table 1 Community characteristics that affect the likelihood that a municipality is included in PLANDERO

Community characteristic	Impact on probability of municipality being included in the project in year 1 (1996)	Impact on probability of municipality being included in the project up to year 3 (1998)
Distance from the project headquarters in Santa Rosa *effect of each additional 10 kilometers*	-33% (*p*=0.010)	-37% (*p*=.001)
Size of municipality *effect of each additional 10 kilometers*^{2}	+8% (*p*=0.044)	+8% (*p*=0.073)
Population density, 1988 *effect of each additional 10 people/kilometers*^{2}	+6% (*p*=0.702)	+3% (*p*=0.820)
Prevalence of stunting in first graders, 1997 *effect of each additional percentage point*	+3% (*p*=0.358)	-0% (*p*=0.919)
Percentage of small farmers receiving production credit, 1993 *effect of each additional percentage point*	+15% (*p*=0.024)	+5% (*p*=0.429)

Household-level data collected in 1997 indicate that there were clear differences in three characteristics—the amount of land owned by the family, the number of years of schooling of the most educated individual in the household, and history of group membership—between PLANDERO households and a random (and representative) sample of households in the same communities. Table 2 shows that PLANDERO households owned more land, were better educated, and had more previous experience of participation group activities than non-PLANDERO households in the same communities.

Taken together, we observe the following. PLANDERO is sited in a poor area of Honduras. Also consistent with these objectives, the project documentation identifies a concentration of poor smallholders as a criteria for selection of area of operation. With respect to individual beneficiary families, emphasis is placed on reaching poorer households. Yet, Table 1 indicates that, in practice, increased poverty has no effect on the likelihood that an area will receive assistance from PLANDERO. Participants in PLANDERO are better-off than nonparticipants. By contrast, being close to the project headquarters and having previously

Table 2 Characteristics of PLANDERO and non-PLANDERO households

Mean values of:	PLANDERO households	Non-PLANDERO households in same communities
Family land (hectares)	2.06	1.05
Education of most educated member (years)	6	4
Group membership prior to PLANDERO (person-years)	3.00	0.63

participated in a farmer's group are positively associated with involvement with PLANDERO. The project is well run and well organized. Broadly speaking, implementation has proceeded *ahead* of schedule and yet, it appears to be systematically excluding the poorest localities and the poorest households. Why?

In answering this question, it is helpful to note a number of additional features of PLANDERO. As in many rural development projects, PLANDERO is required to meet an implementation schedule, defined here in terms of enrollment of households into groups. Second, the project is required to satisfy rate of return criteria. Third, project monitoring and evaluation include components that will assess not only the speed of implementation but also impact among beneficiaries. Specified monitoring targets include number of new groups, number of new members, farm production, and "economic results" for the farmer. Although data on landholdings of beneficiaries were collected, this information is not processed. Indeed, conspicuously absent from the project is any attempt to monitor the identity of the beneficiaries. Nowhere in the project documentation or in interviews with project staff did we encounter any systematic attempts to determine whether the project was actually reaching the poorest households in western Honduras. Fourth, PLANDERO effectively receives a flat payment for each group formed; more specifically, nowhere in its schedule of remuneration is an allowance made for the higher costs associated with reaching poorer, more remote areas. Finally, failing to incorporate poor households cannot be used as grounds for dismissing PLANDERO staff and their remuneration is not linked to meeting performance objectives.

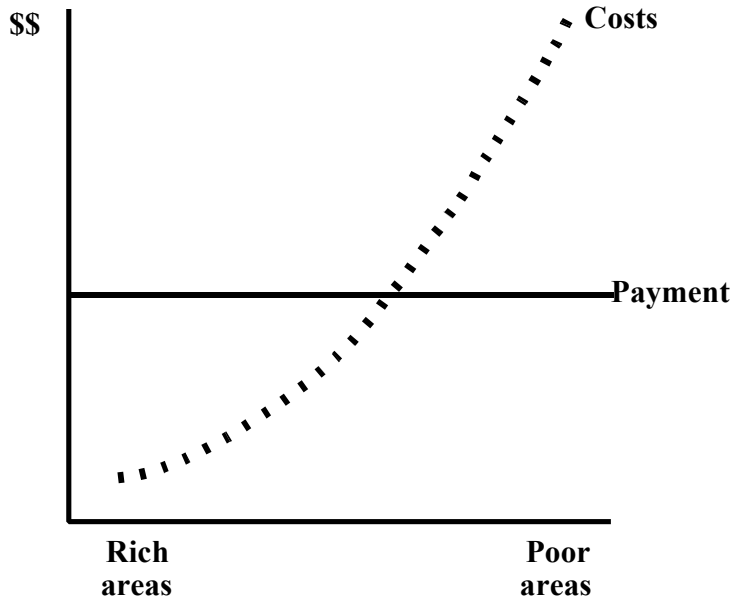
These considerations form part of the answer to the question, why does PLANDERO fail to reach the poorest of the poor in this region of Honduras? There are four interlinked factors:

variation in costs of provision; the flat payment system; the multiplicity of noncomplementary objectives; and inappropriate monitoring of project progress.

In order to understand the importance of the first two factors, we begin by noting that much of this area is poorly served by physical infrastructure. There are few paved roads, and many tracks are rendered impassable during the rainy season. Much of the region is steeply sloped, which makes transport even more problematic. Problems of physical access become more attenuated as one moves away from the regional capital, Santa Rosa. It is also the case that rates of poverty, as measured by either height-for-age Z-scores or "basic unmet needs" (housing, water, supply, dependency ratios) are higher in more remote areas. In other words, it is more difficult and more costly in terms of time and money to reach poorer localities than it is to reach better-off localities. Yet, payment to PLANDERO does not take this into account. The consequence of these two factors is shown, in stylized form, in Figure 1. As we move from richer, more accessible localities to poorer, less accessible areas, the cost of service provision rises, but the payment remains unchanged. Clearly, it will not be profitable to serve any region where the costs exceed the payment and, in general, these will tend to be poorer areas. Second, both the project and the service providers are required to meet targets regarding group formation, and to subsequently demonstrate "economic results." Meeting these objectives is most easily achieved by targeting the intervention to those households that have already been past recipients of credit and are therefore more likely to be creditworthy—better educated households who can more easily grasp the concepts associated with the technologies provided by the project. In other words, by setting and monitoring these objectives, PLANDERO discourages service providers from seeking out poorer farmers—precisely the opposite of what is intended with most development projects! Finally, not reaching the poor imposes no costs on either PLANDERO staff or the service providers—targeting criteria and broader geographical coverage have never been checked.

It is important to stress again that PLANDERO is a well-run project. The problem identified here is not one of poor implementation, lack of funding, or poor technical design. The fundamental problem is that PLANDERO's institutional structure—the relationship between the many project objectives, PLANDERO, and the service providers—is one that discourages inclusion of the poor.

Figure 1 The consequences of PLANDERO payment and costs of service



3. DESIGNING INSTITUTIONAL ARRANGEMENTS TO MAXIMIZE FOOD SECURITY IMPACT ON THE POOR

In this section, we generalize from our observations regarding PLANDERO to provide guidelines for designing institutional arrangements that will improve the food security and nutrition impacts of development projects. We begin by noting that in many development projects, there are three principal parties or actors. There is the project controller; there are the individuals charged with responsibility for implementing the project; and there are the beneficiaries of the project. Each group faces a slightly different set of incentives and constraints. The project controller seeks to achieve the project's objectives, but cannot feasiblely oversee all aspects of project implementation. For this basic reason, he or she arranges a contract with a local service provider to implement the project. This may be a government ministry or private company. In some cases, as in PLANDERO, this actor may also subcontract out

individual project components to other agencies. These providers benefit from this arrangement—most directly in the form of payment for services, but also possibly indirectly through the provision of equipment and training—but they also incur costs associated with implementing this work. Finally, there are the project beneficiaries who benefit from this intervention, but may also incur costs (for example, where the project requires communities to contribute labor to the construction of irrigation canals). Although this description may appear rather obvious, it carries with it an important implication: namely that all parties involved in projects obtain benefits and incur costs. Circumstances where the costs are higher than the benefits, or benefits are only derived from undertaking certain actions or achieving certain objectives, will influence the behavior of these parties. Six specific aspects of institutional design follow from this observation: the careful specification of project objectives; the explicit recognition that seeking out the poor is liable to be more expensive and more difficult than reaching average or better-off farmers; the need to monitor project progress in a timely fashion; the development of indicators to monitor project implementation and impact; linking good performance to remuneration; and effectively dealing with poor performance.

As already noted, part of PLANDERO's difficulties stem from the specification of a number of noncomplementary objectives to be attained in a given time period. For example, attaining improved "economic results" was not directly linked to providing services to poorer farmers, and given that the former but not the latter was monitored, no party had an incentive to ensure that the project actively sought out poorer farmers. One way of addressing this problem is to describe a project's expected impact in terms that are specific and measurable. Examples are "Crop incomes of beneficiary households with less than 5 hectares of land should increase by 25 percent by the completion of the project"; or "At the completion of this project, the percentage of participating households obtaining less than 2,000 kilocalories per person per day during the lean season will be reduced by 40 percent." An explicit statement of measurable impact clarifies what the project expects to achieve, and sets the stage for the development of indicators that measure progress toward this goal.

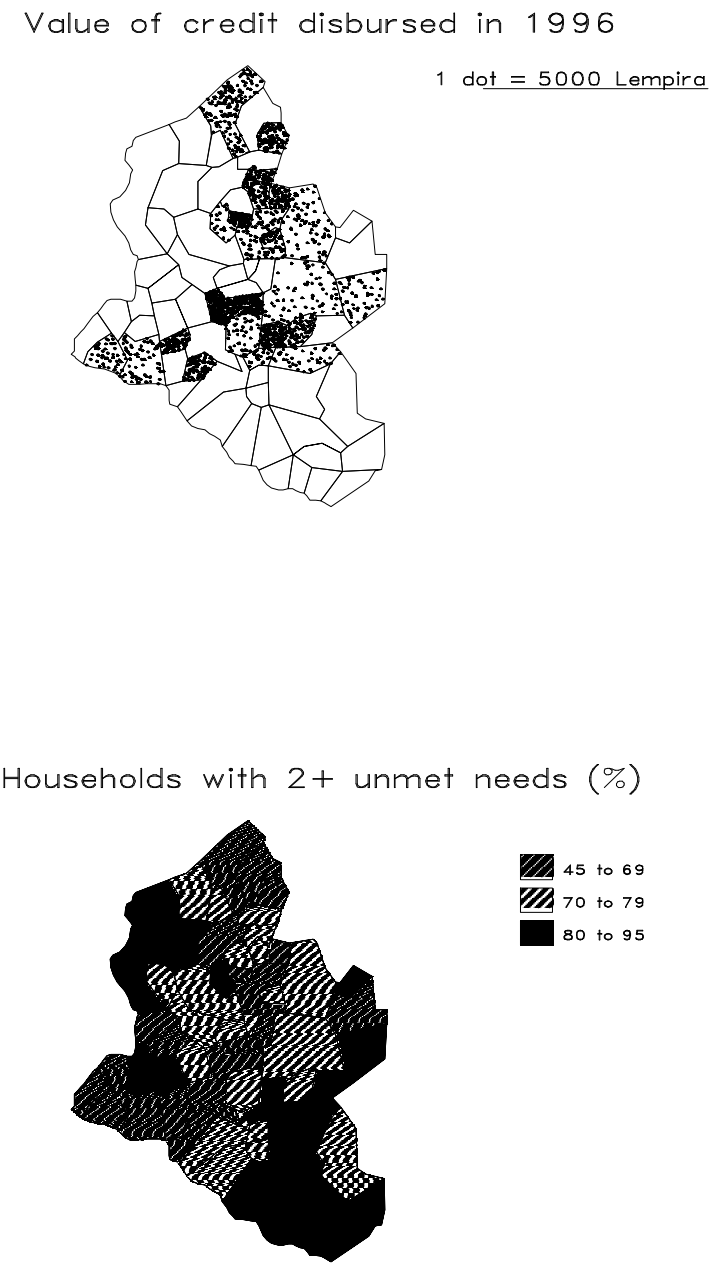
Second, contracts with implementing agencies need to recognize that it will be more expensive to reach more inaccessible areas where the poor are most likely to be concentrated. An obvious solution is to develop more flexible payment schedules that take this into account.

The third feature is the importance of creating, designing, and using techniques to monitor project progress. One such tool is *Epi Map,* described in Technical Guide #4. *Epi Map* is a simple-to-use GIS program that permits the mapping of outcomes of interest that can be downloaded for free from the Internet. An example of *Epi Map*'s power is Figure 2. The top panel maps the percentage of households with two or more unmet needs. The bottom panel maps the allocation of credit by PLANDERO in its first full year of operation. A comparison of these maps indicates that in its first year of operation, PLANDERO was operating almost exclusively in better-off localities.

The fourth feature is the development, at the outset, of an agreed set of indicators to monitor project implementation and impact. These indicators should be consistent with the project's overall objectives and mutually consistent with each other. The importance of this stems from the observation made in the context of PLANDERO that monitoring and evaluating activities provides an incentive to project staff. The wrong indicators provide an incentive to behave in a fashion that frustrates the attainment of the project's overall objective. The development of these indicators can draw on Technical Guides #5 and #7, which outline measures of nutrition and food security, respectively, and Technical Guide #6, which outlines rapid appraisal techniques for project monitoring and evaluation.

In this context, Technical Guide #10, which provides a general introduction to evaluation methodology, is especially useful. It argues that the evaluation of a project comprises four sequential steps: the assessment of provision, utilization, coverage, and impact. This suggests that performance indicators for service providers be similarly phased. Consider a hypothetical project in which a number of service providers are contracted to provide farmers with technical advice. In years 1 and 2, emphasis could be placed on monitoring and evaluating the identity of project participants. Are these providers working in poor areas? Are the poorest farmers gaining access to the benefits of this intervention? In years 2 and 3, the focus is on monitoring "process" indicators. Are farmers actually learning anything from this contact? Is the advice being used? In years 3 and 4, assess impact. Have the appropriate measures of outcome—incomes, caloric availability, dietary diversity, or nutritional status—as specified under our first remark been improved?

Figure 2 An example of *Epi Map*'s power



The fifth component, which follows directly from these, is the careful linking of remuneration to achievement of performance indicators. Rewarding individuals whose actions facilitate the success of the project already occurs in many development projects, if only implicitly. Two considerations provide the reason for emphasis on "careful linking." The first can be described as the "folly of rewarding A while hoping for B." Again consider PLANDERO. Here, it is hoped that opening lines of credit for producer groups will lead to improved credit access by the poorest households. But evaluation is only done on the basis of forming groups; and as we have seen here, providers have an incentive to form groups where formation is most easy. If the objective is to improve credit access by the poorest households, then remuneration should, in part, be linked to whether *this* objective has been achieved. More generally, if one wants to achieve "B," remuneration should be linked to achieving "B" and not something else. Second, it is important to note that poorly thought-out links between remuneration and performance can be destructive. Again consider the hypothetical example of a project designed to provide farmers with extension advice. Suppose as part of the project design, a bonus is offered to the service provider whose clients score best on some test of farming knowledge. In such circumstances, no service provider has an incentive to assist any other provider, since their own reward is highest when they do better than everyone else. A better approach might be the following. If a project has an extension component, test participating farmers on knowledge of farming techniques being disseminated by the project—and compare these test results against a control group of nonparticipants. Remuneration can be based on test scores relative to a control group as well as improvement over time and partly based on how the project performs as a whole to encourage cooperation across service providers.

The final component is, in some sense, the opposite of the fifth component. Where certain goals are not met, there should be credible penalties that ultimately result in termination of contract.